Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Humatics Corporation Request for Waiver of Section 15.519(a) of the Commission's Rules	)	ET Docket No. 19-242
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COMMENTS OF AVIATION SPECTRUM RESOURCES, INC.

Aviation Spectrum Resources, Inc. ("ASRI") hereby submits its reply comments on the Humatics Corporation ("Humatics") Request for Waiver ("Request") filed with the Commission on July 16, 2019.[1] In the Request, Humatics seeks waiver of Section 15.519(a) of the Commission's rules which prohibits the use of fixed infrastructure to permit Humatics to obtain a grant of equipment authorization for an ultra-wideband ("UWB") system that employs fixed infrastructure.[2]

ASRI is the communications company of the U.S. commercial aviation industry and is owned by the airlines and other airspace users. As sponsor of the Aeronautical Frequency Committee ("AFC"), ASRI brings together expertise and opinions from across the aviation sector to promote the safe and effective operation of commercial aviation radio communications and navigation systems in use within the U.S.[3] The 117.975 - 137 MHz Aeronautical Mobile (Route) Service

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1 *Humatics Corporation Request for Waiver of Section 15.519(a) of the Commission's Rules*, ET Docket No. 19-242 (filed July 16, 2019). *See also Office of Engineering and Technology Seeks Comment on Humatics Corporation Request for Waiver of Section 15.519(A) of the Rules for an Ultra-Wideband System That Employs Fixed Infrastructure,* Public Notice, ET Docket No. 19-242, DA 19-836 (rel. Aug. 27, 2019).

2 47 C.F.R. § 15.519(a).

3 AFC membership includes: Airlines for America, Alaska Airlines, Air Line Pilots Association, American Airlines, Aircraft Operators and Pilots Association, ASRI, The Boeing Company, Bristow Helicopters, Chevron, Collins Aerospace, Delta Airlines, Era Helicopters, Federal Aviation Administration, Federal Express, Frontier Airlines, Harris Corporation,

("AM(R)S") allocation in the U.S. is used by both the Federal Aviation Administration, and commercial aviation service providers, to transmit air traffic control and other safety and regularity of flight messages. These VHF services form the foundation of domestic air management and are the primary means of relaying messages for aircraft control nationwide. Therefore, the aviation industry approaches applications that may affect these aviation VHF safety services with significant caution. Aviation relies heavily on both certified and non-certified GPS receivers to ensure the safe and efficient operation of aircraft at all stages of flight, including pre-flight, take-off, approach, and landing. Further, just above 4200 MHz, in the 4200-4400 MHz Band, radio altimeters on which virtually all passenger planes in the United States and increasingly deployed Wireless Avionics Intra-Communications ("WAIC") are operating.[4] Both play critical functions in aviation safety.

Humatics explains that its Spatial Intelligence Platform ("Platform") consists of microlocation systems designed to operate under the UWB rules in industrial logistics and manufacturing settings to provide precise location information for tasks such as automatic guided vehicle navigation, crane control, forklift tracking, and worker tracking.[5] Platforms could be located both indoors and outdoors and would be mounted on fixed infrastructure. As explained herein, ASRI shares the concerns of the GPS Innovation Alliance ("GPSIA") in that the *Request* lacks critical information that would allow ASRI to assess the impact on the potential for interference to important aviation systems.[6] Until the information described herein is provided, giving the Commission and

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Helicopter Association International, Helicopter Safety Advisory Conference, International Air Transport Association, JetBlue Airways, National Air Transportation Association, PHI, Inc., Société Internationale de Telecommunications Aéronautique, Southwest Airlines, United Airlines, and United Parcel Service.

[4] The *Request* makes reference to the 3700-4200 MHz band in a way that suggests the Platforms will operate in this band among the others that may be included within its UWB mode of operation. *See Request* at 1, n.2.

[5] *Id.* at 2-3.

[6] *See* Comments of GPS Innovation Alliance, ET Docket No. 19-242, at 2 (filed Sep. 16, 2019)("Comments of GPSIA").

stakeholders such as ASRI and GPSIA the opportunity to assess the potential for harmful interference on authorized systems of significance to the stakeholders, the Commission should decline to grant the *Request.*

It is unclear from the *Request* the frequency bands of operation. Humatics does not mention specific frequencies, and a review of previous equipment authorizations that it filed on the Commission's EAS Filing System indicate UWB devices operating as low as 1000 MHz and many with upper frequencies above 4400 MHz. Humatics, in its *Request,* asserts that its Platforms will operate on a non-interference basis, pointing to a short list of commercial communications systems (*e.g.*, Cellular, PCS, AWS, Wi-Fi/Part 15), some of which operate in bands below 1000 MHz. Propagation distance is frequency dependent, and radio signals of larger wavelengths (*i.e.*, of lower frequencies) typically propagate further (all else being equal); consequently, the interference threat from a UWB system covering a significant range may be greater in lower frequency bands. For these reasons, ASRI asks that the Commission require Humatics to provide more specific information regarding the frequency bands in which its Platforms will operate. In addition, if Humatics has any information regarding the question of compatibility of its Platform devices with authorized aviation operations, including GPS receivers used in aviation, the Commission should strongly encourage Humatics to submit that information into the record.

ASRI submits that any waiver grant also be limited to the fields of use specifically spelled out in the *Request* and noted above. Operation of the Humatics Platform on outdoor or indoor fixed infrastructure in any additional environments should require that Humatics obtain additional waivers. To that end, however, Humatics must clarify its *Request*. As GPSIA notes, "the record before the Commission lacks critical technical information and there is currently a discrepancy between the scope of deployment described in the Humatics Request versus in the

Humatics marketing materials."[7] In addition to the request above for more information concerning the frequency ranges over which the Platforms will operate, ASRI joins GPSIA in requesting that Humatics be required to supplement the record "by (1) providing the product specification[s] for its UWB module with its Request and (2) expressly confirming that the waiver is for specific industrial microlocation applications stated in the Request, i.e. Automatic Guided Vehicle Navigation, Crane Control, Forklift Tracking, and Worker Tracking," despite marketing materials that suggest broader applications.[8] ASRI also agrees with GPSIA that any grant should confirm that wide-scale urban deployment scenarios are outside of the scope of its Request, and any future plans to expand the Platforms' fields of use employing fixed infrastructure should be the subject of additional waiver requests.[9]

Once ASRI and other aviation stakeholders have the opportunity to review the *Request* supplemented by the information sought herein, and assuming no issues are found, any waiver grant should be specific to those frequencies and fields of use (in addition to any other conditions imposed).[10] However, ASRI anticipates that, even without the information requested, with regard to Platforms operating on fixed infrastructure *within enclosed buildings* in the environments described -- Automatic Guided Vehicle Navigation, Crane Control, Forklift Tracking, and Worker Tracking in factories, ports, and warehouses -- provided that all other applicable Part 15 rules are adhered to without waiver, the potential for harmful interference to aviation systems from *indoor* Platforms would be negligible.

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7 Comments of GPSIA at 4.

8 *Id.* at 2.

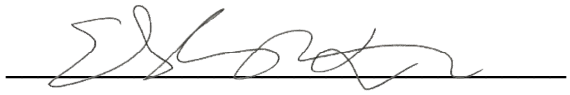
9 *See id.*

10 Humatics states that the systems deployed on fixed infrastructure will be professionally installed. *See Request* at 10, 12. The Commission should require installation in this manner – by Humatics or a professional installer – as a specific waiver condition should the Commission grant the *Request*.

In conclusion, for the foregoing reasons, the Commission should require Humatics to provide the additional information described herein, and give interested stakeholders a reasonable chance to review and analyze it, before acting on the *Request*.

Respectfully submitted,

AVIATION SPECTRUM RESOURCES, INC.



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